# PATENT SPECIFICATION

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COMPLETE SPECIFICATION

## An Automatic Fire Extinguisher

I, JOSEF NEUMANN, of 6, Adlergasse, Brünn, Czecho-Slovakia, a Czecho-Slovakian Citizen, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to that kind of automatic fire extinguisher, in particular for use in motor vehicles, wherein there is a container filled with a liquid extinguishing agent such as carbon tetrachloride, which container, due to the combustion of a readily ignitable member is discharged of its contents on the explosion of an explosive charge.

Previous to my invention it has been proposed in specification 391361 to provide a fire extinguishing grenade wherein carbon tetrachloride is provided in a container and an explosive charge is arranged in an inflammable tube which projects through the wall of the container, the said container not being acted on by the said charge.

The said invention consists in adapting the apparatus to be fixed by a support above a fire risk and in making the container, which is provided with a thin bottom, of artificial resin or similar substance and in locating within the liquid a readily ignitable small tube filled with the explosive charge and projecting through the thin wall or bottom of the container.

The said extinguisher is intended in particular for extinction of fires occurring in the carburettors of motor vehicles.

It is known to provide automatically acting extinguishers for mounting above carburettors in which fuses are used, which take much time until the fuse ignited by the fire actuates the extinguisher.

Furthermore, automatically acting extinguishing apparatus provided with mechanical devices such as, for example, springs under tension which are released by the burning through of a member, have been employed. In such apparatus either a cartridge which slowly forces the extinguishing fluid from the apparatus is operated, or a glass vessel is broken from which the extinguishing fluid is free to flow out. Also these apparatus take relatively long time until the extinguishing fluid acts, and therefor, cannot prevent a partial combustion of the endangered devices.

Moreover, these known devices present the disadvantage that a metallic mechanical device will, through the action of damp air or gases, undergo certain alterations on its surface, whereby their release will become unreliable. Also the constant shocks that occur in automobiles will act unfavourably on the said devices, the cords retaining the springs under tension getting worn out whereby the device is actuated unnecessarily. Since it is difficult to seal metallic vessels that contain the extinguishing fluid, either the said extinguishing fluid will evaporate, or if extinguishing powders are used, such powders will become damp, so that they will to a considerable extent lose their extinguishing capacity. It has been proposed to employ paper containers and cardboard partitions but containers or partitions of those materials are unsuitable to contain a volatile extinguishing liquid such as carbon tetrachloride.

All these disadvantages are entirely removed by my invention. This is attained by the absence of any mechanical device whatever as well as by the absence of a fuse, the whole device being made without the use of any metal but solely of artificial resin or the like, which has the advantage of not requiring any sealing or packing members, due to the fact that the individual parts of the container may be assembled to form a unitary structure by coating the screw threads with some solvent, so that the joints are directly pasted together and the use of any sealing material is avoided. Thus, the extinguishing liquid can neither escape nor undergo an alteration in the course of time. The forcing out of the extinguishing liquid takes place due to the fact that a portion of the device that is, the aforesaid tube, is made of a readily inflammable material such as celluloid which will be directly ignited by the fire kindled. This ignitable tube contains gunpowder or the like, the combustion of which will produce a considerable pres-

[Price 1/-]

sure above atmospheric, due to which the extinguishing liquid will be driven out with great force.

When the apparatus is used, for example for the purpose of extinguishing carburettor fires in automobiles, it is mounted above the carburettor so that the bottom of the apparatus is turned towards the burning area. On the breaking-out of a fire the readily inflammable tube which is in the said area will therefore be at once ignited, so that an immediate operation of the extinguishing device will take place. Other advantages of the use of artificial resin over the use of metal are the small weight of the device, which is apt to favourably influence the price of the apparatus.

In the accompanying drawing, an example of an embodiment of the invention is illustrated.

Figure 1 is a longitudinal section of the fire extinguisher according to the invention, and

Figure 2 shows the distributor which forms a part of the extinguisher.

*1* is a container made of artificial resin or the like. The said container is sealed at the top thereof by a cap *2* screw-threaded on and cemented to the member *1* by means of a liquid adhesive or solvent. The bottom *3* of the said container is preferably of artificial resin and forms an integral part of the container. The said bottom is so thin that on a high pressure being produced in the container it will burst into small pieces. The said container is almost completely filled with an extinguishing liquid, such as carbon tetrachloride, ethyl bromide or the like. These liquids are chemically neutral to artificial resin and celluloid, so that no alterations can take place by the action of these chemicals. Into the bottom plate a small tube *4* is inserted, which, at least at its lower part, that is, where it is fitted into the bottom *3*, is made of a readily inflammable material, such as, for example, celluloid. The upper portion of the small tube which, preferably, is enlarged by means of a small cap at *5*, may be made of a less readily inflammable material. The tube is filled with gunpowder or the like. At the bottom of the container a conical extension *6* is mounted, say, by means of screw-threads. In order to obtain efficient dispersion of the extinguishing liquid, a plate *9* is fastened to the lower end of the container *1*, which plate is formed with a star-shaped aperture. The said plate is held by means of a ring *10*. The container is appropriately fastened above the fire risk. For this purpose may be used a fastening means *7* which encompasses the container and can be tightened and fastened by means of a bolt *8*.

Structural modifications of the device described may be made without abandoning the scope of the present invention. In all cases, however, the effect will be the same, since, due to the broken-out fire, the lower portion of the tube *4* will be burnt and, thereby, the gunpowder ignited and the resulting increase in pressure inside the container will burst the bottom outwardly and drive out the extinguishing liquid.

It is to be understood that the device according to the invention is not limited to the use in automobiles, but may be employed with advantage in explosion motors in general, as well as in cinema-cabins or places for storing ignitable material.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An automatic fire extinguisher, in particular, for use in motor vehicles, having a container filled with a liquid extinguishing agent such as carbon tetrachloride, which container, due to the combustion of a readily ignitable member is discharged of its contents on the explosion of an explosive charge, characterized in that the apparatus is adapted to be fixed by a support above a fire risk and the container, which is provided with a thin bottom, is made of artificial resin or similar substance and a readily ignitable small tube which is located within the liquid and is filled with the explosive charge, projects through the thin wall or bottom of the container.

2. An automatic fire extinguisher as claimed in claim 1, characterized in that the other end of the small tube, which end is located in the interior of the container, is enlarged by means of a cap set upon the said end.

3. An automatic fire extinguisher as claimed in claims 1 and 2, characterized in that on the bottom end of the container a plate with a star-shaped aperture is located, which plate acts as a disperser.

Dated this 22nd day of January, 1935.

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[This Drawing is a full-size reproduction of the Original.]

Fig. 1.

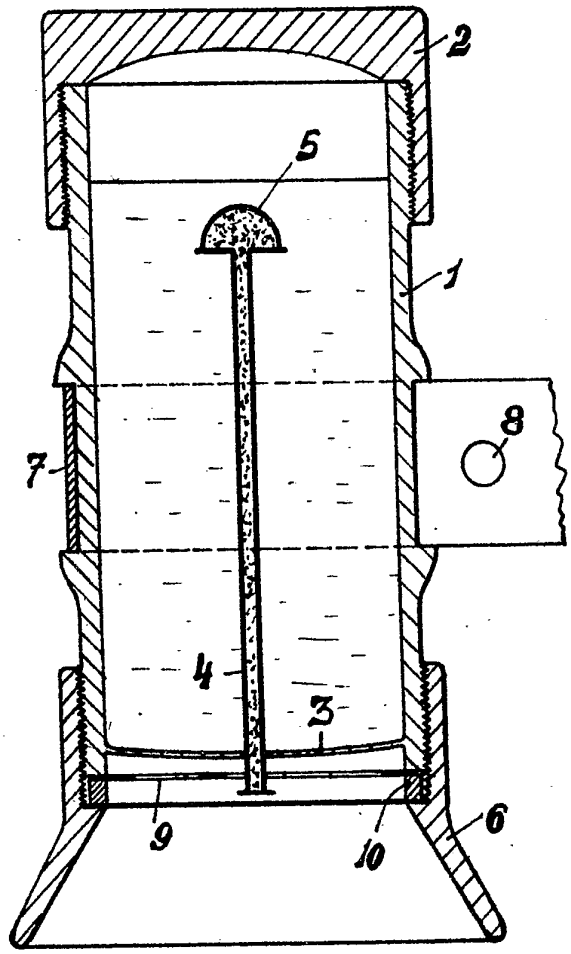
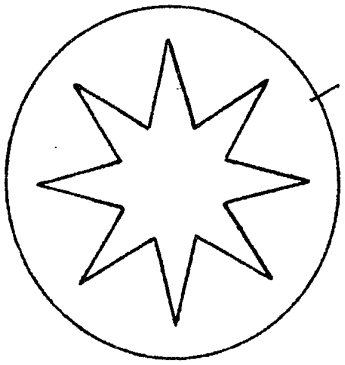



Fig. 2.

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